



EASTERN RESEARCH GROUP, INC.

M E M O R A N D U M

TO: George Smith, U.S. Environmental Protection Agency

FROM: Chad White, Eastern Research Group

DATE: May 30, 1997

SUBJECT: Final Summary of May 8, 1997, Incinerator Work Group Meeting

1.0 INTRODUCTION AND PURPOSE OF MEETING

The May 8 meeting was the seventh meeting of the Incinerator Work Group for the Industrial Combustion Coordinated Rulemaking (ICCR). The major goal of this meeting was to establish a list of tasks and schedule for presenting a scope of the incinerator category to the Coordinating Committee at its July meeting. To achieve this goal, the Work Group received subteam status reports, discussed review of EPA's ICCR database (ICCR database) and use of Microsoft Access software, and began evaluating the potential incinerator subcategories.

2.0 LOCATION AND DATE

This Work Group meeting was held from 9:00 am until 4:00 pm on May 8, 1997, at the U.S. EPA's Environmental Research Center Annex in Research Triangle Park, North Carolina. A copy of the draft meeting agenda is included as attachment 1.

3.0 ATTENDERS

The Incinerator Work Group meeting was open to the public. Participants at the meeting included representatives of the EPA, industry, State and local governments, and the environmental community. A copy of the attendance list for the meeting is

included as attachment 2. A copy of the Incinerator Work Group membership list is included as attachment 3.

4.0 DISCUSSION

After brief introductions, the Work Group received updates about the small business information form, the use of trade organizations as resources, the Coordinating Committee meeting in July, and the status of the ICWI litigation. The Work Group then split and met individually in the subteams established to consider and recommend potential incinerator subcategories. After meeting, each subteam provided a brief status report on its progress. After receiving subteam reports, the Work Group discussed the schedule and tasks needed to meet its goal of presenting source category scoping recommendations to the Coordinating Committee at its July meeting. These discussion topics are summarized in the sections that follow.

4.1 General Updates

Updates were provided about several issues, including small business information, the information collection request, the status of the ICWI litigation, use of trade organizations as resources, and upcoming Coordinating Committee meetings.

4.1.1 Small Business Information

George Smith of EPA reminded all Work Group members to complete and return the small business information form. Work Group members with questions or concerns regarding this form should call George Smith, the EPA Co-chair, directly.

4.1.2 Information Collection Request (ICR)

It was stated that the ICR and its mailing list have been sent to the Government Printing Office, and mailout of the ICR is scheduled for mid-May with a requested return date of July 15.

EPA's goal is to have data entered into the ICCR database by the end of August.

4.1.3 ICWI Litigation

Leslye Fraser of EPA's Office of General Counsel provided an update on the ICWI litigation. EPA is meeting with the litigants to agree upon regulatory development deadlines. Ms. Fraser agreed that, once EPA and the litigants have reached agreement on a schedule for ICWI, she would put a copy on the TTN of the Federal Register notice informing the public of its comment period.

4.1.4 Use of Trade Organizations as Resources

George Smith noted that several Work Group members have been working with trade organizations to provide additional data to the Work Group and to help with data QA/QC. For example, the Solid Waste Association of North America (SWANA) has provided EPA with a list of landfills in the United States, which may be surveyed by EPA with an ICR. Likewise, the Crematory Association of North America (CANA) has offered to survey its members to assist the ICCR. Mr. Smith strongly encouraged use of trade organizations as a resource for the Work Group.

4.1.5 Coordinating Committee Meetings

On EPA's behalf John Huyler, the meeting facilitator, reminded the Work Group that the May Coordinating Committee meeting has been shortened to one day, May 21, and an evening MACT floor primer will follow the meeting. Work Group members were encouraged to obtain a copy of the meeting agenda from the TTN.

4.1.6 Obtaining the ICCR Database

George Smith provided the Work Group with guidance on obtaining a copy of the ICCR database, either by downloading it from the Internet or ordering it on compact disc. A copy of the directions distributed by EPA are included as attachment 4.

4.2 Subteam Status Reports

At its March 11 meeting the Incinerator Work Group formed subteams to examine the incinerators in the ICCR database in a line-by-line fashion. These subteams were tasked to check the quality and accuracy of data in the database and to group incinerators into potential subcategories for analysis and regulation. At this meeting each subteam provided a progress report to the Work Group after meeting individually. All subteams have begun database queries to examine and categorize the incinerators in the ICCR database. Some subteams have contacted trade associations and vendors to collect additional information and to check the accuracy of data.

4.2.1 Subteam 1 Status Report

Subteam 1 is investigating human and animal crematories, pathological incinerators, and pharmaceutical incinerators. Paul Rahill of Industrial Equipment and Engineering Company described the subteam's progress. Mr. Rahill mentioned that the subteam has begun to divide the units in the database among crematory, pathological, and pharmaceutical groupings with electronic sorting. Incinerators that do not fall into one of these categories during an electronic sort will be sorted by hand.

The subteam has contacted the Cremation Association of North America (CANA), who has agreed to supply a list of its members with the ICCR. In addition, the subteam has contacted some vendors to collect information about the equipment they sell and have installed.

Norman Morrow asked if the groupings that the subteam is using to divide incinerators into the crematory, pathological, and pharmaceutical groupings are based on the materials burned or the company activity at the facility. Mr. Rahill responded that

they are separating the units according to materials burned. For example, a unit burning pathological waste at a facility owned by a pharmaceutical company would be categorized as pathological, not pharmaceutical.

4.2.2 Subteam 2 Status Report

Subteam 2 is investigating petroleum, chemical, fume/odor control, process gas, and plastics incinerators. Norman Morrow of Exxon Chemical Americas described the subteam's progress. Mr. Morrow explained that the subteam has queried the ICCR on four standard industrial classifications (SICs) for the petroleum and chemical industries (i.e., 13xx, 28xx, 29xx, and 30xx). The search results contained 400 incinerators, many of which need to be passed off to other subteams. For example, there were many pharmaceutical incinerators found in SIC 28xx; the Subteam 2 has assumed that Subteam 1 will take responsibility for these incinerators.

From the search results, it appears that a majority of the 400 incinerators found through the database query are operating to burn off-gas. There are many asphalt blowing incinerators, and a fair amount of units burning halogenated gas. The subteam noted that there are several units burning miscellaneous solid waste that is difficult to identify. The subteam has decided to wait to categorize these units until data is compiled from the ICR.

The subteam noted that several units burning "industrial wastewater sludge" were selected during its database query. The subteam asked the Work Group to decide which subteam should take responsibility for these incinerators. This issue is discussed in more detail in section 4.2.6.

4.2.3 Subteam 3 Status Report

Subteam 3 is investigating wood, wood products, and pulp/paper incinerators as well as various types of ovens. Dennis Marietta of La-Z-Boy Furniture Company described the subteam's progress. The subteam has queried the database on a list of source classification codes (SCCs) and SICs (i.e., 24xx and 25xx). This search produced a list of 2800 incinerators and burn-off ovens. Mr. Marietta commented that the subteam informally surveyed the wood furniture industry and was able to identify only about half a dozen incinerators; based on this small number of incinerators, the subteam believes that Subteam 3's search results may contain many duplicates, boilers, or incinerators for consideration by other subteams.

Subteam 3 commented that, because of a general lack of fuel data, their ability to evaluate the proper categorization of incinerators is somewhat limited at this point; information from the ICR will help. In addition, the subteam has noted that some incinerators are burning wood with gas-fired burners and commented on the Work Group's need to be judicious when evaluating and categorizing such data.

4.2.4 Subteam 4 Status Report

Subteam 4 is investigating metal industry incinerators. Andy Roth of Regional Air Pollution Control Agency described the subteam's progress and presented the Work Group with a status report (attachment 5). This subteam has built its query to focus on SICs and recognized that this approach may have been somewhat restrictive in identification of metal-burning incinerators. However, the subteam has also queried the database on SCCs beginning with 31- and have observed some incinerators that are clearly misclassified with the wrong SCC.

Subteam 4's search produced a list of approximately 400 incinerators nationwide. The subteam has conducted some line-by-line review of this list, and Mr. Roth noted that some of the

subteam members' trade associations have been very helpful in checking the accuracy of the data.

David Marrack asked whether this subteam was investigating the burn-off and recovery of aluminum materials, steel materials, and bottles. Jeff Shumaker asked whether the subteam would be investigating tire burning as well. Mr. Roth responded that the burn-off of aluminum should be covered under the Secondary Aluminum MACT, and, therefore, the subteam does not plan on investigating aluminum-burning incinerators. However, the subteam agreed to examine steel-burning incinerators, bottle burn-off incinerators, and tire-burning incinerators.

George Smith mentioned that he was sent a list of tire-burning units by a tire-burning association. Mr. Smith commented that many of these units are kilns, which burn tires principally. He offered to send this list to Mr. Roth for consideration by Subteam 4.

4.2.5 Subteam 5 Status Report

Subteam 5 is investigating fiberglass, concrete, and landfill gas incineration as well as municipal and municipal-type waste combustion. George Smith of EPA described the subteam's progress. The subteam has initially queried the database and has generated a listing of around 5000 incinerators in its categories.

The subteam believes that the appropriate people are involved with review of the database but has not yet begun to check the units in a line-by-line fashion. However, a trade association is involved and has begun to help by reviewing the data on small municipal waste combustors. Members of the Solid Waste Association of North America (SWANA) have also joined the subteam and are helping to collect additional information about landfill gas composition and combustion.

4.2.6 Reassessment of Scope of Subteam Responsibilities

After receiving reports from each of the subteams, the Work Group noted that certain categories of incinerators are not being actively considered by any of the subteams. After some discussion, the subteams decided to make the following modifications to the scope of the subteams' categories:

- Subteam 2's responsibilities were expanded to include examination of industrial sludge incinerators. However, sludge incineration that falls within a particular subteam's expertise was encouraged to be examined by that subteam.
- Subteam 4's responsibilities were expanded to include examination of tire burning and burn-off of steel and tin cans as well as bottles.
- Subteam 5's responsibilities were expanded to include examination of agricultural waste incineration.

4.2.7 Work Group Decisions in Response to Subteam Reports

It was recommended that time be provided at subsequent Work Group meetings for subteams to meet in person. In addition, the Work Group decided that EPA's contractor, ERG, may aid with future database queries but not line-by-line examination of data. Requests for database queries by ERG should be sent to the EPA Co-chair.

To ensure that all units from the incinerator portion of the ICCR database are assigned to a particular subteam for review, the subteams will sort the databases for their categories and, at subsequent meetings, cross-check the division of units against the original data set.

The Work Group will ask that the Coordinating Committee consider how to track the pieces of equipment in the ICCR database as they are being tracked by various Work Groups, subgroups, subteams, etc. It was suggested that an extra field

be added to the database to make such a designation. However, EPA expressed disagreement with this suggestion.

4.3 Presentation on Database QA/QC Review

Tom Waddell of Eastern Research Group presented guidance to the Work Groups for review and use of the ICCR inventory database. Copies of the materials from this presentation are included as attachment 6.

4.4 Plan for Preparing Recommendations to the Coordinating Committee

Norman Morrow outlined the tasks that the Work Group needs to conduct to prepare scoping recommendations to present to the Coordinating Committee at its July meeting. In short, Mr. Morrow stated that the Work Group must develop logical categories of incinerators and determine under which statutes (i.e., section 112 or 129 of the Clean Air Act) the categories will be examined.

Leslye Fraser discussed another aspect of the regulatory development steps the Work Group must consider. Ms. Fraser explained that a development of a standard under section 129 will cause co-development under section 111 (New Source Performance Standard); if section 129 applies to a particular subcategory, then section 111 will as well. In addition, George Smith provided some guidance to the Work Group to outline the steps typically followed by EPA when developing a MACT standard. This guidance has been included as attachment 7.

In response to a question, Leslye Fraser clarified that the bases for subcategorization under both section 112 and 129 are size, type, and class of incinerator. Ms. Fraser commented that typically size and type are the criteria used to develop subcategories. Ms. Fraser also pointed out that impact on small business has become a heightened component to impact assessment and adds extra emphasis to the importance of judicious

subcategorization. The question to be asked is, "how can units be subcategorized to minimize the impact to small entities?"

After considering these comments, the Work Group decided that each of the five established subteams should provide initial recommendations for subcategorizations with supporting rationale to the Work Group at its June 4 meeting. These subcategorizations will be used to complete scoping recommendations to be presented to the Coordinating Committee at its July 22 and 23 meeting.

4.5 Definition of "Solid Waste"

EPA provided some guidance to the Work Group about the current RCRA definition of "solid waste" and potential interpretations of this definition. This guidance has been included as attachment 8.

John Ramsey stated that the section 129 definition of "solid waste" is dictated by Clean Air Act statutes and questioned whether EPA has the authority to develop a "solid waste" definition that differs from that in the Solid Waste Disposal Act (i.e., RCRA). Leslye Fraser responded that the Administrator has the legal authority to define a definition of non-hazardous "solid waste" and can use recommendations passed through the Coordinating Committee to make a decision. A goal of the ICCR could be to determine a scope of the definition of "solid waste" and then determine how to define the term legally. Tony Licata emphasized that, regardless of the outcome of EPA's decision on the definition of what "solid waste" is, a universal definition of "solid waste" should be accepted for use among EPA programs and among government agencies.

After some discussion the Work Group decided to ask the Coordinating Committee to coordinate Work Group examination of and recommendation(s) for the definition of "solid waste." The following Work Group members volunteered to work on any combined

Solid Waste Definition Subgroup that the Coordinating Committee forms:

Tom Tyler	David Marrack
John Ramsey	Leslye Fraser
George Parris	Jeff Shumaker
Dave Maddox	Bill Perdue
Tony Licata	Dick Van Frank

5.0 ACTION ITEMS

The following action items will be conducted by members of the Work Group:

- Leslye Fraser will examine the definitions of "air curtain incinerator" and "open burning" and will report back to the Work Group with any potential overlap.
- Leslye Fraser will inform the Work Group of the public comment period for the litigated ICWI regulatory development deadlines by posting a copy of the Federal Register notice on the TTN.
- David Marrack will forward a list of metal-burning incinerators in the Houston area to Andy Roth of Subteam 4.
- George Smith will forward a list of tire-burning incinerators sent to him by a trade association to Subteam 4.

6.0 NEXT MEETINGS

George Smith asked the Work Group to consider rescheduling the July Work Group meeting for July 23 so that the Work Group could meet immediately after the Coordinating Committee meeting on July 21 and 22. The Work Group decided that meeting on July 15 was preferable given the goal of presenting scoping recommendations to the Coordinating Committee at its July meeting. The Work Group decided to schedule its upcoming meetings as follows:

- June 4: Work Group meeting in Research Triangle Park, North Carolina, at EPA's ERC; 9am - 4pm EDT
- July 15: Work Group meeting in Research Triangle Park, North Carolina, at EPA's ERC Annex; 9am - 4pm EDT
- July 30: Teleconference in response to the July 22/23 Coordinating Committee meeting; 11am - 2pm EDT
- Sept 18: Work Group meeting in Research Triangle Park, North Carolina (to follow the Coordinating Committee meeting on September 16 and 17)
- November 20: Work Group meeting tentatively scheduled for Houston, Texas

These minutes represent an accurate description of matters discussed and conclusions reached and include a copy of all reports received, issued, or approved at the May 8, 1997, meeting of the Incinerator Work Group. George Smith, EPA Co-chair.

ATTACHMENTS

- Attachment 1: Draft Meeting Agenda
- Attachment 2: Meeting Attenders
- Attachment 3: Incinerator Work Group Membership List
- Attachment 4: Directions for Obtaining the ICCR Database
- Attachment 5: Subteam 4 Report
- Attachment 6: Guidance to Work Groups on Review and Use of ICCR Inventory Database
- Attachment 7: Example Outline of EPA Steps for Developing a MACT Proposal
- Attachment 8: Handout on "Solid Waste" Definition

Attachment 1: Draft Meeting Agenda

INCINERATOR WORK GROUP MEETING

May 8, 1997; 9am-4pm

EPA's ERC Annex; Research Triangle Park, North Carolina

MAJOR MEETING GOALS

- to provide adequate common knowledge about subteam progress
- to continue to build skills and knowledge about the ICCR database
- to establish a list of tasks and schedule for presenting a scope of the incinerator source category to the Coordinating Committee at its July meeting

9:00-9:20am CONVENE (G. Smith)
WELCOME AND INTRODUCTIONS (J. Huyler)
- REVIEW OF MEETING GOALS (N. Morrow)
- REVIEW OF MEETING AGENDA (G. Smith)

9:20-9:45am UPDATES
- Small business information (G. Smith)
- Use of trade associations as resources (G. Smith)
 · additional information collection
 · QA/QC review of database information
- Coordinating Committee status (J. Huyler)
- Other updates (Work Group member input)

9:45-10:20am SUBTEAM HUDDLE (a chance for the subteams to meet briefly in person and exchange information and materials)

10:20-10:30am BREAK

10:30-11:30pm SUBTEAM PROGRESS UPDATES
- Subteam 1 (P. Rahill)
- Subteam 2 (B. Morris)
- Subteam 3 (D. Marietta)
- Subteam 4 (A. Roth)
- Subteam 5 (G. Smith)
- Discussion

Attachment 1: DRAFT AGENDA (continued)

- 11:30-1:00pm LUNCH (cafeteria available on-site)
- 11:45-12:45pm OPTIONAL MICROSOFT ACCESS PRESENTATION
(ERC Annex Cafeteria Conference Room)
- 1:00-1:30pm DATABASE QA/QC REVIEW GUIDANCE AND DISCUSSION
(T. Waddell, ERG)
- 1:30-2:30pm DISCUSSION OF PROGRESS REPORT FOR COORDINATING
COMMITTEE: are we going to be ready by the July
22 with our source category scope?
- UPDATE
- ICWI Litigation (L. Fraser)
- TOPICS TO DISCUSS
- Source category subcategorizations
 - Solid waste definition: formation of a subgroup
to develop a recommendation?
 - Section 129 and section 112 coverage issues
(metal-burning units)
 - Other issues requiring Coordinating Committee
decisions
 - Status report for May 21 Coordinating Committee
meeting
- 2:30-2:45pm BREAK
- 2:45-3:30pm CONTINUED DISCUSSION OF PROGRESS REPORT FOR
COORDINATING COMMITTEE
- 3:30-3:45pm NEXT MEETINGS
- May 22: possible teleconference/meeting in RTP?
 - June 4: possible teleconference?
 - July 15: hold in Denver, Colorado?
 - July 24: meeting in Long Beach, California?
 - September 10: move to September 15 or 18?
 - November: meet in Houston on the 17 or 20?
- 3:45-4:00pm APPROVAL OF FLASH MINUTES

Attachment 2: Meeting Attenders

Name	Affiliation
Sandra Birckhead	Glaxo Wellcome
Larry Faith	Shell Development Company
Leslye Fraser	U.S. EPA/OGC
John Huyler	The Keystone Center
Tony Licata	Licata Energy and Environmental Consultants
Dave Maddox	Stanley Furniture Company
Ruth Mahr	environmental interests
Dennis Marietta	La-Z-Boy Chair Company
David Marrack	Galveston-Houston Association for Smog Prevention
Ruth Mead	Eastern Research Group
Norman Morrow	Exxon Chemical Americas
George Parris	American Wood Preservers Institute
Bill Perdue	Pulaski Furniture Corporation
Fred Porter	U.S. EPA/OAQPS
Susan Radomski	Eastern Research Group, Inc.
Paul Rahill	Industrial Equipment and Engineering Company
John Ramsey	Kansas Department of Health and Environment
Andrew Roth	Regional Air Pollution Control Agency (Dayton, Ohio)
Jeff Shumaker	International Paper
George Smith	U.S. EPA/OAQPS
Larry Thompson	Cornell University, College of Veterinary Medicine
Tom Tyler	Institute of Scrap Recycling Industries
Dick Van Frank	National Audubon Society
Tom Waddell	Eastern Research Group, Inc.
Dale Walter	Industrial Equipment and Engineering Company
Ed Wheless	Los Angeles County Sanitation District
Chad White	Eastern Research Group, Inc.
William Wiley	Consumat Systems, Inc.

Attachment 3: Incinerator Work Group Membership List

Industrial Combustion Coordinated Rulemaking Incinerator Work Group Membership as of May 8, 1997

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Attachment 4: Directions for Obtaining the ICCR V2.0 DATABASE

HOW TO DOWNLOAD DATABASE FROM TTN:

- ICCR V2.0 is available on the TTN as a zipped file: ICCRV2.ZIP. It can be found in the Information Collection Section off the Main Menu.
- The database is broken down into individual source categories in the Miscellaneous Download Area of each of the Source Work Group boards. These files are: ICENGV2.ZIP, BOILERV2.ZIP, FLAREV2.ZIP, INCINV2.ZIP, PRHEATV2.ZIP, TURBINV2.ZIP
- All files must be unzipped before viewing in Access 2.0. For Information on unzipping files, see the "System Utilities" board on the TTN. Choose Archivers/Dearchivers to download PKUNZIP.
- To expedite downloading, it is recommended that FTP be used. The address for this is [ttnftp.rtpnc.epa.gov](ftp://ttnftp.rtpnc.epa.gov). The entire database file can be found at: `g - drive/iccr/dirsm/iccrv2.zip`. The individual files can be found at `g - drive/iccr/dirss/FILENAME`.
- Minimum system requirements: 386 processor with 8 MB of RAM.
Recommended system requirements: 486DX processor with 16 MB RAM.

HOW TO ORDER THE CD - ROM:

- ICCR V2.0 is also available as a CD - ROM. The CD includes ICCR V2.0 and the six subsets of the database: ICENGV2.MDB, BOILERV2.MDB, FLAREV2.MDB, INCINV2.MDB, PRHEATV2.MDB, and TURBINV2.MDB.
- In addition to the files listed above, the CD includes a document that outlines the structure of the database, describes each table and field of the database, and provides keys for codes used. It also includes a guide for determining the source of each entry in the database, a spreadsheet of county and state codes used in the database, and a spreadsheet of units associated with SCC Codes.
- To order a CD, contact CES Communication by phone at 919-833-5785, by fax at 919-833-4649, or by email (cesmail@aol.com). The price of the CD is \$60.
- Orders will be shipped UPS. Next day shipping is available for an extra charge.
- Minimum system requirements: 386 processor with 8 MB of RAM.
Recommended system requirements: 486DX processor with 16 MB RAM.

ICCR DATABASE

Incinerator Work Group Subteam 4

Subteam 4 focus: **Metals-related Incineration**

1. Review incinerator portion of database (first-version)
 - a. Use INCINV1.MDB (3.56 Mbytes)
 - b. Query for Standard Industrial Classifications (SICs):
 - 3300 through 3999 ----- metals-related manufacturing
 - 50* ----- wholesale trade - durable goods
 - 75* ----- transportation equipment repair
 - 76* ----- miscellaneous repair services
 - 99* ----- unclassified
 - c. Line-by-line review of hard copy (thanks to R. Ragland):
 - eliminate non-metals-related units
 - eliminate multiple records for same emissions unit
 - d. 207 units identified from 850 records
2. Develop model query
 - a. Use Ross Ragland's marked-up copy
 - b. Identify Source Classification Codes (SCCs) associated with metals-related incinerators (19), plus 12 additional likely
 - c. Identify keywords in Combustor Description field (30 & NULL)
 - d. See tables
 - e. Completed model query sorts by SIC, SCC, and keywords in Combustor Description field

3. Validate model query
 - a. Use INCINV1.MDB
 - b. Compare query output with expert line-by-line review
 - c. Results: Ross Ragland - 277 records (including multiples)
query output - 385 records (including multiples)
4. Run query on the big banana (ICCRV2.MDB, 119 Mbytes)
 - a. Query output - 680 records (including multiples)
5. Were any metals-related incinerators misassigned SCCs????
 - a. Adjust query
 - b. Expand SCC listing to 729 values (all but 31 queried previously)
 - c. Reduce number of keywords in Combustor Description field to 23
 - d. Eliminate Combustor Description field NULL
 - e. Results: 464 records (!)
 - f. Line-by-line review: likely metals-related units: 76
 - g. Total in ICCRV2.MDB = 400 to 500 (estimate)
6. Breakdown of unit types based on R. Ragland's line-by-line
 - a. See figure
 - b. Lots of unknowns (insufficient detail in database)
 - c. Rack pyrolyzer units - electroplating, PVC coating
 - d. Estimate of total population = 7 to 10

SOURCE CLASSIFICATION CODES
For Metals-related Incinerators

<u>SCC</u>	<u>Description</u>
30400208	Industrial Processes, Secondary Metal Production, Copper, Wire Burning: Incinerator
30400232	Industrial Processes, Secondary Metal Production, Copper, Wire Incinerator
30490013	Industrial Processes, Secondary Metal Production, Fuel Fired Equipment, Natural Gas: Incinerat
30609903	Industrial Processes, Petroleum Industry, Incinerators, Natural Gas (??)
30902501	Industrial Processes, Fabricated Metal Products, Drum Cleaning/Reclamation
30990013	Industrial Processes, Fabricated Metal Products, Fuel Fired Equipment, Natural Gas: Incinerator
31307001	Industrial Processes, Electrical Equipment, Electrical Windings Reclamation, Single Chamber
31307002	Industrial Processes, Electrical Equipment, Electrical Windings Reclamation, Multiple Chamber
39990013	Industrial Processes, Miscellaneous Manufacturing Industries, Natural Gas: Incinerators
50200101	Waste Disposal, Solid Waste Disposal - Commercial/Institutional, Incineration, Multiple Chamber
50200102	Waste Disposal, Solid Waste Disposal - Commercial/Institutional, Incineration, Single Chamber
50200103	Waste Disposal, Solid Waste Disposal - Commercial/Institutional, Incineration, Controlled Air
50200506	Waste Disposal, Solid Waste Disposal - Commercial/Institutional, Incin: Special Purpose, Sludge
50300101	Waste Disposal, Solid Waste Disposal - Industrial, Incineration, Multiple Chamber
50300102	Waste Disposal, Solid Waste Disposal - Industrial, Incineration, Single Chamber
50300103	Waste Disposal, Solid Waste Disposal - Industrial, Incineration, Controlled Air
50300105	Waste Disposal, Solid Waste Disposal - Industrial, Incineration, Conical Design, Wood Refuse (?)
50300108	Waste Disposal, Solid Waste Disposal - Industrial, Incineration, Auto Body Components
50300599	Waste Disposal, Solid Waste Disposal - Industrial, Incineration, Fuel Not Classified
30X0034X	Process Heater, Other (includes institutional, commercial, industrial, burning unspecified wastes)
50X0001X	Incinerator Burning Fuel Oil #2, #3, #4, and Diesel
50X0002X	Incinerator Burning Fuel Oil #5, #6, #7
50X0003X	Incinerator Burning Natural Gas
50X0004X	Incinerator Burning Propane
50X0006X	Incinerator Burning LPG (liquefied petroleum gas)
50X0014X	Incinerator Burning Industrial Solid Waste (unspecified - can include type 0 and 6 wastes)
50X0015X	Incinerator Burning Commercial or Industrial wastes (includes solid/non-solid wastes...
50X0016X	Incinerator Burning Finishing Wastes (Commercial or Industrial wastes from metal coating...
50X0025X	Incinerator, Wireburning/wire reclamation
50X0026X	Incinerator Burning Metal Wastes (includes metal product manuf. wastes and metal reclamation)
50X0034X	Incinerator Burning Other (includes facilities burning unspecified wastes)

COMBUSTOR DESCRIPTION Keywords

For Metals-related Incinerators

armature	*auto* [@]	*bayco*	
burn off	*burn-off*	*burnoff*	*burn out*
	burn-out	*burnout*	
cleaning	*copper*	*drum*	
elec [@]	*hook*	*metal*	
motor [@]	*oven* [@]	*paint*	
pyroly	* rack*	*reclamation* [@]	
reclaim [@]	*scrap *	*strip*	
transform	*wind* [@]	*wire*	

* = wildcard character that allows any characters on either side of keyword in Combustor Description field

[@] = denotes keywords not used in universal SCC database query

This page could not be reproduced electronically. A hard copy of the graph of the population distribution of metal-related incinerators is available in hard copy in the docket.

RACK PROCESSING COMPANY

Dayton, Ohio

Polyvinyl chloride (PVC) coated rack pyrolyzer

- Batch unit (8 to 10 hours per batch)
- Copper bar stock electroplating racks, coated with PVC (dielectric)
- Racks are placed in the main chamber @ room temperature
- Natural gas-fired afterburner preheat cycle (30 minutes)
- Natural gas-fired main burner ignites, set point 450 °F
- Afterburner operating temperature ~ 1500 °F
- PVC is pyrolyzed to a very fine, easily-removed ash coating on racks
- Racks can then be repaired or modified prior to recoating and reuse

Emissions

- No HAPs stack data on pyrolyzer in operation, but 1973 stack testing on previous bigger unit (NO AFTERBURNER or other control device) measured emissions of particulate matter, various hydrocarbons and HCl.

Results:

HCl ~ 170 pounds per batch
benzene ~ 89 pounds per batch
chlorinated hydrocarbons ~ 10 pounds per batch
particulate matter ~ 24 pounds per batch

- 90 to 95 percent reduction in PM emissions due to afterburner
- Occasional citizen complaints of smoke/odors from pyrolyzer stack persist.
- Ambient air PCDD/PCDF measurements in Dayton, Ohio.
1988 (Wright State University): 2 of 4 air samples had high concentrations of PCDD/PCDF. Measurements correlated with PVC pyrolyzer operations.
- 1995 (RAPCA/Battelle): 1 of 6 air samples had high concentrations of PCDD/PCDF. Measurements correlated with PVC pyrolyzer operations.
“The 1995 and 1988 studies both suggest that a PVC pyrolyzer may have been responsible for much of the ambient air PCDD/PCDF measured at the Site 8 and Edgemont sampling locations.”

BUT WHAT ABOUT SECTION 129???

“The term ‘solid waste incineration unit’ does not include (A) materials recovery facilities (including primary or secondary smelters) which combust waste for the primary purpose of recovering metals...”

OK, but my feeling is that the phrase “for the primary purpose of recovering metals” suggests that the material or item being fed to the combustor has no value aside from the value of its metals’ content. This implies that the excluded units are the first step in a recycling process, where the recovered metal would then be subjected to additional refining and/or metal-working prior to reuse. In other words, the material or item being fed to the excluded unit is scrap material. In the case of PVC-coated rack pyrolyzers, the copper being recovered through the waste combustion process retains the majority of its value by remaining in the form of an electroplating rack. While the copper indeed has value as scrap copper metal, the primary purpose of the PVC pyrolyzer is to recover racks, not copper metal. In addition, I believe this should hold as well for other incineration units that recover an item or part that has value above that attributable to its metals’ content. Therefore, armature burnoff units, paint hook burnoff units, and drum burn units should also remain subject to Section 129. Scrap burnoff units, wire burnoff units, and precious metal recovery units may be excluded from Section 129.

Attachment 6: Guidance to Work Groups on Review and Use of ICCR Inventory Database

DRAFT Guidance to Work Groups on Review and Use of ICCR Inventory Database

1. Identify misclassified units to be given to other Work Groups
2. Identify and correct obvious errors
3. Identify and resolve duplicate facilities and duplicate combustion units
4. Add facilities and combustion units
5. Manipulate data and use it to:
 - Estimate the population
 - Identify subcategories
 - Develop model plants
6. Identify control technologies in use
7. Identify sources of test data

Detailed Guidance on
Work Group Review of ICCR Inventory Database

1. Within the Work Group's database, review SCCs and each individual combustion unit to determine: (1) if a whole SCC should be handled by another Source Work Group, or (2) whether some individual units are misclassified (e.g. do not belong in the listed SCC or do not belong in the source category and should be given to another Work Group). Work Groups should give suggested changes to the EPA Work Group Co-chair so they can be changed in the master database and given to the other Work Group.
2. Review entries to identify obvious errors and correct them. For example, search numerical fields to identify numbers (e.g. combustion unit sizes) that are not within the believable range, or cases where a number is given without a unit of measure. Determine how to correct suspect data.
3. Identify potential duplicates and resolve them:
 - (a) ERG and AG weeded out duplicate facilities when AIRS, OTAG and a State database listed the same facility (plant), but we did not try to correct situations where within the AIRS database itself (for example) it appeared the same facility was listed twice with 2 different AIRS ID #s. Someone would have to determine case-by-case which entry is more correct to address these situations.
 - (b) Where 2 databases did not use a consistent combustion unit numbering system, there may be duplicate combustors within a facility. For example, the same facility may have 2 boilers that were listed in AIRS or OTAG, and 3 boilers that were listed in a state database or the ICWI/OSWI database. In many cases there was not enough information to tell which of the boilers matched, so the final database lists all of them (as if there were 5 boilers) with the specific information about each and reference codes to show where it came from). Again, determining which specific units can be combined would be a case-by-case decision and might require additional information from the facility.
4. Provide available information on any facilities and combustion units that should be added to the inventory database. Such data should be provided to the EPA Work Group Co-chair in Microsoft Access in the same format as the ICCR database.
5. Start manipulating the data and determine how to use the database, possibly in conjunction with other information to, (1) estimate the population (or population distribution) of combustion units (2) identify preliminary subcategories, and (3) develop model plants. See model plant discussion attached.
6. Identify control technologies in use within each source category and subcategory. These will be useful in identifying control techniques to investigate in developing the MACT floor and regulatory alternatives.
7. Identify combustion units for which codes in the database indicate that an emission rate is based on test data, and determine whether

and how to try to obtain copies of the test report if it is not in the STIRS database.

Attachment. Model Plant Development

Model plants are to be developed to represent segments of the population and are used in performing cost, emission reduction, and other impacts analyses. A reasonable number of models should be developed to represent key differences that have a large influence on emissions, control feasibility, and control costs. However, Work Groups should seek to keep the number of model plants manageable by having a single model represent a range of sizes and similar designs.

Key fields of the ICCR database should be reviewed to obtain information needed for model plant development. The types of information used for model plant development include: fuels/waste types combusted, combustor capacity, general design type, operating hours, existing control device, and/or other key characteristics that influence emissions and costs of control. (Note that conversions may need to be done to get capacities or other parameters in common units.)

It is not necessary to have complete information for every combustor in the database to develop model plants, as long as the database gives sufficient information to determine the range of capacities, fuels, etc that should be represented by the models. If specific information (e.g. design information, vent stream characteristics) is needed that is not available in the database, this could be supplemented by manufacturers' information, industry or trade association information, market research databases, plant visits, etc.

Population information is needed to extrapolate model plant impacts to the national level. The database, possibly in conjunction with other sources of information, can be used to estimate the population represented by each model. Again, it is not necessary that every combustion unit be listed in the database to estimate the national population. Additional information could be obtained from previous studies, market research, trade association information, DOE fuel use reports, etc. Or other extrapolation techniques could be used to estimate population. For example, if some states in the ICCR database appear to have very complete population information on a subcategory, the populations in these states might be used to extrapolate the likely national population.

Attachment 7: Example Outline of EPA Steps for Developing a MACT Proposal

STEPS FOR REACHING PROPOSAL OF A MACT STANDARD

A. CHARACTERIZE THE INDUSTRY

1. Determine availability of data
2. Collect data
3. Identify remaining data gaps
4. Conduct site visits/testing

B. DETERMINE MACT

1. Develop preliminary subcategories
2. Develop model plants (model incinerators)
3. Determine MACT floor level of control for category/preliminary subcategories
4. Determine regulatory alternatives
5. Determine environmental and cost impacts of regulatory alternatives on model plants
6. Conduct benefits and economics analyses
7. Select MACT

C. DEVELOP STANDARD FOR PROPOSAL

1. Determine the format of the Standard
2. Determine testing, monitoring, and recordkeeping and reporting requirements
3. Estimate cost of testing, monitoring, and recordkeeping and reporting requirements.
4. Prepare the preamble, regulation, and OMB form 83 for OMB
5. Revise package based on OMB comments
6. Send package to Administrator for signature

A. CHARACTERIZE THE INDUSTRY

1. Determine availability of data

Description: Determine the types of data that are readily available and develop schedule for obtaining data.

Steps: Identify sources of data including

- literature
- existing databases
- previous rule-makings
- industry studies

Time required: 1 month

2. Collect data

Description: Collect data to compile into database used for later analyses.

Steps:

- a. Collect and compile data identified from A.1.
- b. QA data to ensure correct data entry/transfer
- c. Identify data gaps
- d. Develop survey questionnaires (if needed) to fill in data gaps
- e. Send out questionnaire
- f. Compile questionnaire responses and QA information
- g. Contact facilities to answer response questions
- h. Incorporate survey data into database

Time required: 6-12 months

3. Review data and identify remaining data gaps

Description: Review for missing information to determine how well database characterizes industry

Data needed:

- Procedures for reviewing database
- Database from A.2. [Note: Many subcategories can proceed with current database and will not need to wait for survey responses. Others can start with current database but will need to wait for survey results for final review]
- HAP emission information (from STIRS, Utility HAP report, AP-42, GRI, API, etc)

Steps:

- a. QA database for accuracy of information
- b. Determine HAPs of interest

- c. Review emissions information for HAPs of interest
- d. Review population database and emission database for gaps in emissions, controls, and process information
- e. Determine if site visits or testing can fill data gaps
- f. Determine number and location of tests/site visits to be representative

Time required: 2-3 months

4. Conduct site visits/testing

Description: Obtain data to fill in data gaps

Data needed: Results of A.3.f.

Steps:

- a. Develop testing protocol
- b. Conduct test or site visit
- c. Write test report/trip report
- d. Incorporate report data into database

Time required: 1 month for site visits, 4 months for testing

[Note: MACT determination (steps B.1 through B.4) may begin concurrently with steps A.3 and A.4 above]

B. DETERMINE MACT

1. Develop preliminary subcategories

Description: Identify any commonalities in the industry where segments may be grouped together. Identify the factors that influence emissions and technical feasibility of control to determine whether different segments should be examined separately (i.e, subcategorized).

Data needed:

- Incinerator designs, waste types, capacities
- General knowledge of pollutants emitted, emission rates, emission controls in use and their effectiveness

Steps:

- a. Identify characteristics affecting emissions
- b. Determine potential lower size cut-offs
- c. Determine other potential exclusions
- d. Group segments with similar characteristics

Time required: 3-5 weeks

2. Develop model plants (model incinerators)

Description: Represent the ranges of sizes and types of incinerators in the subcategory for use in calculating costs and emission impacts of controls. Models are typically used when sufficient site-specific information on every plant is not available.

Data needed:

- Incinerator designs, incinerator capacities, control devices/levels, operating hours, waste type/analysis, other fuel, etc. for subcategories
- For economics analysis, type of industry using incinerator, products, plant sizes or production capacities.

Steps:

- a. Identify characteristics that would vary significantly from plant to plant
- b. Break subcategory into incinerators that would represent the variation of characteristics.

Time required: 1-2 months

3. Determine MACT floor level of control for category/preliminary subcategories

Description: Meet the statutory requirements of MACT standards--the minimum level of control which the regulation might require. Costs and benefits are not considered when developing the MACT floor.

Data needed:

- Controls in database, control requirements from regulations, emission limits

Steps:

- a. Identify existing control technologies/control levels/pollution prevention/work practices.
- b. Attribute efficiencies (% reduction) or emission limits (concentrations or rates) to the identified control devices/pollution prevention/work practices (for total HAP, and individual HAPs).
- c. Determine the MACT floor for existing sources in each subcategory:
"The average emission limitation achieved by the best performing 12 percent of existing sources..."
- d. Determine the MACT floor for new sources in each subcategory:
"The emission control that is achieved in practice by the best controlled similar source."
- e. Document analyses

Time required: 1-2 months

[Note: There are various ways to approach MACT floor determinations (steps c. and d.)]

4. Determine regulatory alternatives

Description: Develop possible levels of control. The first regulatory alternative is the MACT floor. Additional regulatory alternatives are more stringent than the floor.

Data needed:

- Existing level of control
- Potential technologies/techniques that may be used to control emissions and their performance

Steps:

- a. Determine the type of regulatory alternative (e.g., a device that achieves better control, control of a larger segment of the population, etc.)
- b. Assign regulatory alternatives to model plants.

Time required: 1 month

5. Determine environmental and cost impacts of regulatory alternatives on model plants

Description: Evaluate the impacts of regulatory alternatives on emissions and the costs for implementing the alternatives. Results will be used in the economics and benefits analyses.

Data needed:

- Cost algorithms for control techniques, inputs for algorithms (e.g., flue gas flow rates of model incinerators)
- Emissions information to develop emission factors or emission estimates for model incinerators

Steps:

- a. Identify cost procedures/algorithms to calculate capital and annual costs of controls including equipment, installation, O&M, capital recovery, etc.
- b. Determine inputs for algorithms (e.g., characteristics of exhaust streams for model incinerators)
- c. Develop emission factors relating emissions to model plant variables
- d. Identify emissions reduction/limits for regulatory alternatives control techniques
- e. Calculate baseline emissions (i.e., emissions with existing controls and regulations) for model plants

- f. Calculate emission reductions for model plants for regulatory alternatives
- g. Calculate capital and annual costs of regulatory alternatives for model plants
- h. Calculate cost-effectiveness (\$/Mg emission reduction) of alternatives for model plants
- i. Calculate energy requirements of regulatory requirements
- j. Calculate other environmental impacts of regulatory alternatives (including water, solid waste, secondary impacts)
- k. Calculate national impacts for existing sources by scaling model plant impacts by number of plants, waste burn, throughput, or production rate.
- l. Estimate the number of new sources projected to be built over a 5-year period
- m. Calculate national impacts for new sources projected over a 5-year period
- n. Document analyses in the preamble, technical memos, and other background documentation

Time required: 3-4 months

6. Conduct benefits and economics analyses

Description: Estimate the potential impacts to the national economy and the health effects of the alternatives [**Economic Analyses Workgroup will take the lead**]

Data needed:

- Location (city/state, longitude/latitude, etc) and exposure model inputs (e.g., stack height and velocity, meteorologic information)--often model a range of example plants rather than every plant
- Control costs (from task 6) and additional economic information

Steps:

[Note: See EPA/RTI presentation from March 19 meeting for a full discussion of economics and benefits analyses]

Time required: 4-6 months

7. Select MACT

Description: One of the regulatory alternatives is selected considering the environmental and

benefits, as well as the costs and economics analysis. **[Workgroup will recommend to coordinating committee and coordinating committee will recommend to EPA. EPA will make the decision.]**

Data needed:

- Results of benefits/economics analyses

Time required: 1-2 months to develop recommendation and pass through the coordinating committee

1-2 months for EPA management review and decision

C. DEVELOP STANDARD FOR PROPOSAL

1. Determine the format of the Standard (2-3 weeks)
2. Determine testing, monitoring, and recordkeeping and reporting requirements. (1-3 months)
3. Estimate cost of testing, monitoring, and recordkeeping and reporting requirements. (2-4 weeks)
4. Draft sections of the preamble, regulation, and OMB form 83 for OMB. (3-5 months)
5. Revise package based on EPA management review and OMB review. (4-5 months)
6. Send package to Administrator for signature. **[EPA only]**

Attachment 8: Handout on “Solid Waste” Definition

INDUSTRIAL COMBUSTION COORDINATED RULEMAKING

What Is “Solid Waste” ?

Section 129 - Clean Air Act

“Solid Waste” shall have the meaning established by the Administrator pursuant to the Solid Waste Disposal Act

Solid Waste Disposal Act

“Solid Waste” means garbage, refuse, sludge ... and any other discarded material, including solid, liquid, semi-solid ... material resulting from industrial, commercial ... activities ...

“Hazardous Waste” means a solid waste ... which ... may:

(A) ... contribute to an increase in mortality or ... illness

(B) ... pose a ... hazard to human health or the environment when improperly ... managed

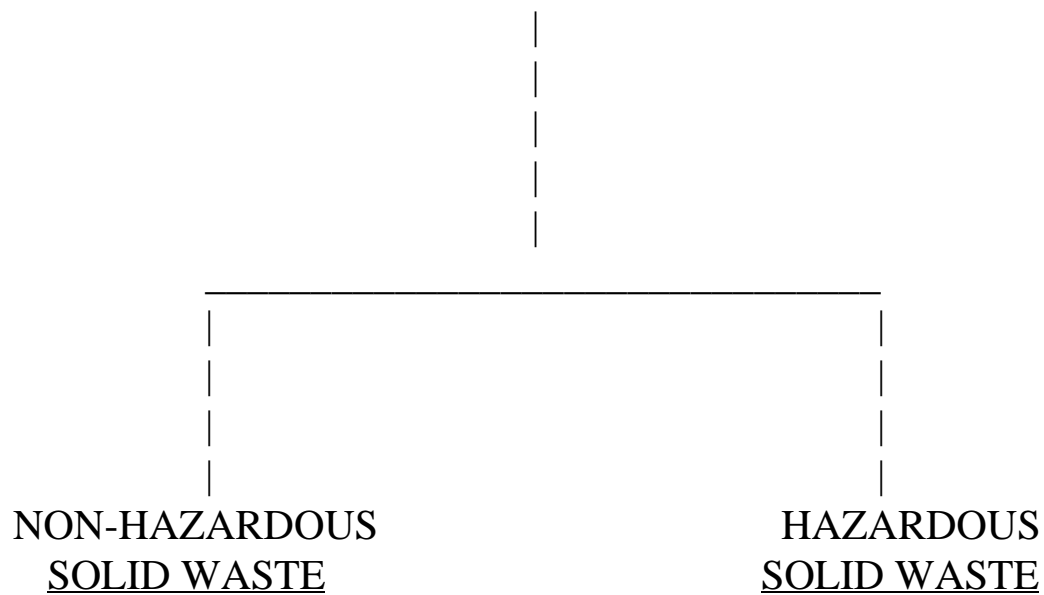
... the Administrator shall ... develop ... criteria for identifying ... hazardous wastes and ... listing hazardous wastes

INDUSTRIAL COMBUSTION COORDINATED RULEMAKING

What Is “Solid Waste” ?

SOLID WASTE

Solid, Liquid, Semi-solid Discarded Material



INDUSTRIAL COMBUSTION COORDINATED RULEMAKING

What Is “Solid Waste” ?

Code of Federal Regulations

Parts 240 - 299 Solid Waste Regulations

Parts 240 - 259 Non-Hazardous Waste

Parts 260 - 272 Hazardous Waste

Parts 273 - 299 Misc. and Reserved Parts

Non-Hazardous Solid Waste (Parts 240 - 259)

Definition of Solid Waste established by the Administrator - pursuant to the Solid Waste Disposal Act - is essentially the same as that included in Solid Waste Disposal Act

“Solid Waste” means garbage, refuse, sludge ... and any other discarded material, including solid, liquid, semi-solid ... material resulting from industrial, commercial ... activities ...

INDUSTRIAL COMBUSTION COORDINATED RULEMAKING

What Is “Solid Waste” ?

Hazardous Solid Waste (Parts 260 - 272)

Definition of Hazardous Waste established by the Administrator - pursuant to the Solid Waste Disposal Act :

“Hazardous Waste” is a solid waste which:

(a) meets the criteria of a hazardous waste

- ignitable
- corrosive
- reactive
- toxic

(b) is “listed” as a hazardous waste, or

(c) is a mixture which includes a hazardous waste

“Solid Waste” is any discarded material.

NOTE

Definition of “Solid Waste” used applies ONLY to wastes which are also hazardous wastes

INDUSTRIAL COMBUSTION COORDINATED RULEMAKING

What Is “Solid Waste” ?

Discarded Material [HAZARDOUS WASTE]

Discarded material is any material which is :

- (a) abandoned
- (b) recycled
- (c) considered inherently “waste-like”

Materials are abandoned if they are :

- (a) disposed of
- (b) burned or incinerated
- (c) Accumulated, stored, or treated before, or in lieu of, being disposed of, burned or incinerated.

Materials are recycled if they are :

- (a) used in a manner constituting disposal
- (b) burned for energy recovery, used to produce a fuel, or contained in fuels

INDUSTRIAL COMBUSTION COORDINATED RULEMAKING

What Is “Solid Waste” ?

Discarded Material

Discarded material is any material which is :

- (a) abandoned
- (b) recycled
- (c) considered inherently “waste-like”

Materials are inherently “waste-like” if they are :

- (a) one of several “listed” materials
- (b) materials that are ordinarily disposed of, burned or Incinerated
- (c) materials containing toxic constituents not ordinarily present in these materials

INDUSTRIAL COMBUSTION COORDINATED RULEMAKING

What Is “Solid Waste” ?

Potential Changes to Definition of “Discarded Material”

Changes are being discussed which might exempt certain types of materials from consideration as a hazardous waste or subject these types of materials to less stringent requirements where:

- (a) the materials are reused within the process as a raw material or
- (b) disposed of on land

NO changes are being discussed or considered which would alter, in any way, the classification of a material as a hazardous waste where it was incinerated or burned for energy recovery

NO changes are being discussed or considered which would classify materials, which would otherwise be classified as hazardous wastes - but which are burned for energy recovery, as fuels and not hazardous wastes

INDUSTRIAL COMBUSTION COORDINATED RULEMAKING

What Is “Solid Waste” ?

What Is “Solid Waste” Under Section 129 ?

Definition established by the Administrator pursuant to the Solid Waste Disposal Act is :

“Solid Waste” means garbage, refuse, sludge ... and any other discarded material, including solid, liquid, semi-solid ... material resulting from industrial, commercial ... activities ...

INDUSTRIAL COMBUSTION COORDINATED RULEMAKING

What Is “Solid Waste” ?

Develop Definition of “Discarded Material” ?

Could consider developing definition of “discarded material”

- > Hazardous solid waste regulations have a definition of discarded material
- > No definition of discarded material has been developed for non-hazardous solid waste

Hard to Explain Why Definition of Discard Should be Different

Would appear that judgments or decisions about the “nature” of whether a material is hazardous or non-hazardous is unrelated to judgments or decisions about whether a material has been discarded or not

Seems whether a material is considered hazardous or non-hazardous is determined by the inherent properties or nature of the material

Seems whether a material is considered discarded or not is determined by the further use or disposition of the material